

III. *A Revision of the Genus Diplatys, Serv. (Dermaptera)*
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[Read April 6th, 1910.]

PLATES VII, VIII.

IN working out the Dermaptera for the "Fauna of British India" series, I was surprised at the number of undescribed species of *Diplatys* which came to hand.

Six species, including African and American, were included by de Bormans in his monograph of the Dermaptera in 1900, yet in India alone we have now double that number, of which ten were described by myself, seven of them in the Indian monograph.

A considerable number from other parts of the world rendered necessary a thorough revision of the genus. The synonymy has now been to a great extent cleared up, and there are no less than 33 species already known to science, including those first described in these pages.

In 1904² I tentatively proposed a first attempt at a classification based on structural characters, and I have found this quite serviceable when elaborated to receive the recently discovered species.

It is quite certain that there remain a very great many new forms yet to be discovered, and very probably the number of described species will be doubled within the next few years.

Exceedingly valuable characters are afforded by the subanal plate, or penultimate ventral segment.

This may be entire, emarginate, or more or less lobed. The latter is the rarer shape: there is a small rectangular lobe in *D. angustatus*, and in *D. nigriceps* there is a small obtuse convexity.

In *D. conradti* and *D. bormansi* there is a small round emargination, but the outline is more complex in *D. gerstaeckeri*, *D. ernesti*, *D. flavicollis*, and *D. siva*; in the latter there are two round emarginations, with a smaller obtuse emargination between them, so that there projects a transverse, sinuate lobe between the two deep incisions. In

D. gerstaeckeri there are two emarginations leaving an acute triangle between them; in *D. ernesti* the general form is the same, but the triangular lobe is more obtuse. In *D. flavicollis* there is a sharp incision forming two acute lobes.

Where the subanal plate is entire, the posterior margin may be gently sinuate or straight, the sides convex or parallel, or the whole plate more or less rectangular or rounded.

In *D. macrocephalus* it is very broad, subquadrate, the posterior margin subsinuate, the exterior angles rounded. In *D. gladiator* the outline is similar, and in *D. falcatus* and *D. lefroyi*; in all these the sides are convex, the posterior margin being almost straight in the former, and narrower and subsinuate in the latter.

In the group with non-emarginate subanal plate, we find *D. bicolor*, *D. vosseleri*, *D. griffithsi*, and *D. greeni* with the posterior margin gently sinuate; the remaining species, with non-sinuate, entire subanal plate, fall into two groups; the first has the last dorsal segment non-inflated: in this group we have *D. jacobsoni* and *D. annandalei*, both Oriental species, with the subanal plate rectangular; it is more or less rounded at the sides and angles in *D. rufescens*, *D. fletcheri*, and *D. fella*.

The last dorsal segment is inflated in *D. liberatus*, *D. raffrayi*, and *D. aethiops*.

In the genus *Diplatys*, we find that a grouping of the species according to the form of the last sclerites and of the forceps gives results agreeing fairly well with the geographical distribution of the species. At the same time, the outline of the pronotum affords useful features, as also the structure of the head.

We find three distinct types of head. In one type the three areas with which the dorsal aspect is divided by the transverse and median sutures are not strongly differentiated from each other; the frons is not specially tumid, and the right and left portions of the occiput are not specially depressed, nor are they furnished with postocular keels running from the inner margin of the eyes to the extero-posterior angles of the head; the sutures are well marked. This may be called the normal type of head, as it shows the minimum deviation from the general type of Dermapterous head. We find this normal type of head in *D. gladiator* and *D. bicolor*.

In the next type, which we may call the sloping type, the frons is distinctly tumid, the tumidity gradually dying out posteriorly, ending at the posterior margin of the head itself; the occiput is not strongly nor abruptly depressed, nor markedly separated from the frons, the transverse suture being obsolete, and the median suture nearly so. In this type there are more or less sharp keels running from the interior margin of the eye to the extero-posterior angles of the head: these keels are gently arched in *D. lefroyi*; in *D. aethiops*, *D. jansoni*, and *D. severa* they are strong, and the posterior margin is incrassate, so that they fuse with it, thus forming a blunt rectangular ridge at the posterior angle, this ridge continuing to the median suture, which is short and distinct; in *D. jacobsoni* the keels are sharp and distinct, but short, whereas in *D. gerstaeckeri* and *D. ernesti* they are longer.

In the third type of head the frons is markedly tumid and the occiput strongly depressed; the transverse suture is sometimes strongly marked, but sometimes indistinct or obsolete, the tumid frons passing abruptly into the depressed occiput with no clear suture, but only brusque change from tumidity to depression. The members of this group, which have rather short and feeble keels, are *D. siva*, *D. annandalei*, *D. conralti*, *D. angustatus*, and *D. griffithsi*; those with strong, sharp, and long keels, are *D. macrocephala*, *D. bormansi*, *D. greeni*, *D. rufescens*, *D. vosseleri*, *D. raffrayi*, *D. gracilis*, and *D. fletcheri*. The sutures are especially distinct in *D. vosseleri*.

There appears, however, to be no connection between the structure of the head and geographical distribution, since we find in each group this arranged species from various zoogeographical regions.

In order, therefore, to approach a more natural system, it is necessary to adopt the structure of the apex of the abdomen and its appendages as our basis of classification, having recourse to the structure of the head and form of the pronotum for supplementary features.

The pronotum is long and narrow in *D. thoracicus*, but as a rule the length is but little greater than the breadth: the usual outline ranges between subpentagonal, subrectangular, and suboval.

In some species the abdomen is strongly and abruptly dilated at the apex, the last segment being strongly inflated; in others, the abdomen is less strongly and more

gradually dilated, in which case the last segment is feebly inflated; in others, the dilation is scarcely pronounced, the last dorsal segment being not inflated at all. The branches of the forceps may be remote at the base and arcuate, or subcontiguous and nearly straight; they may be depressed or trigonal. In some cases they are strongly dilated at the base itself, as well as flattened, thus reminiscent of the Forficuline type of forceps.

All these above-mentioned characters are peculiar to the males; in the females, the structure of the head is simple and not specialised, the apex of the abdomen not dilated, and the forceps invariably contiguous and simple.

The number of described species has been so much augmented in recent years, that what were formerly considered to be dimorphic forms of the male are probably to be considered distinct species. It is obvious that the characters given by de Bormans are quite valueless, for the species were discriminated by him by colour alone.

The form of the penultimate ventral segment is very difficult to describe in words, and often hard to distinguish with the eye. The figures illustrate these diverse forms better than any words can do.

TABLE OF SPECIES.

- | | |
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| 1. Forcipis bracchia ♂ basi valde dilatata
ac deplanata. | |
| 2. Segmentum ultimum dorsale ♂
fortiter dilatatum, abdomine valde
latius; forceps abrupte attenuatus. | |
| 3. Elytra vix longiora quam latiora;
alae abortivae; species indica . | 1. <i>gladiator</i> , Burr |
| 3.3. Elytra valde longiora quam
latiora; alae perfecte expli-
catae. | |
| 4. Segmentum penultimum ven-
trale ♂ subquadratum, postice
haud angustatum, medio haud
impresso; species africana . | 2. <i>macrocephalus</i> , Beauv. |
| 4.4. Segmentum penultimum ven-
trale ♂ postico subangusta-
tum, medio impresso; species
irdica | 3. <i>falcatus</i> , Burr |

- 2.2. Segmentum ultimum dorsale ♂ paullo dilatatum, abdomine vix latius; forcipis pars dilatata brevis, a supero aegre distinguenda; species indicae.
- 3. Segmentum penultimum ventrale ♂ lateribus rotundatis, margine postico leviter sinuato; forcipis brachia ♂ robusta, leviter arcuata 4. *lefroyi*, Burr
- 3.3. Segmentum penultimum ventrale ♂ fortiter angustatum, margine postico in lobum truncatum producto; forcipis brachia graciliora, fortius arcuata 5. *angustatus*, Burr
- 1.1. Forcipis brachia ♂ basi haud valde dilatata.
- 2. Pronotum duplo longius quam latius, parallelum; species brasiliensis. (Pronotum femoraque pallida, nigro-vittata) 6. *thoracicus*, Dohrn
- 2.2. Pronotum haud plus quam $1\frac{1}{2}$ longius quam latius, vel aequè longum ac latum.
- 3. Antennae segmentis 4 globulari, 5 pyriformi (segmentum penultimum ventrale angustum; parallelum, apice rotundatum; pronotum longius quam latius; colore fulvo-rufo, species brasiliensis) 7. *gracilis*, Stål
- 3.3. Antennae segmentis omnibus cylindricis vel subcylindricis.
- 4. Occiput ♂ margine postico ipso incrassato, plus minus reflexo; (pronotum aequè longum ac latum; species neotropicae).
- 5. Segmentum ultimum dorsale abdomine vix latius; colore rufo, nigro-variegato 8. *jansoni*, Borm.
- 5.5. Segmentum ultimum dorsale ♂ abdomine dimidio latius; colore atro 9. *severa*, Borm.

- 4.4. Occiput ♂ margine postico
haud incrassato; species
africanae et orientales.
5. Segmentum penultimum ven-
trale ♂ vel emarginatum,
vel lobatum.
6. Segmentum penultimum
ventrale ♂ simpliciter
rotundato-emarginatum. 10. *conradti*, Burr
- 6.6. Segmentum penultimum
ventrale ♂ emargina-
tum ac lobatum.
7. Segmentum penultimum
ventrale ♂ emargina-
tione transversa, lobulis
brevibus.
8. Segmentum penul-
timum ventrale ♂
lobulis brevissimis,
acutis 11. *bormansi*, Burr
- 8.8. Segmentum penul-
timum ventrale ♂
lobulis majoribus
rotundatis 12. *dohrni*, sp. n.
- 7.7. Segmentum penulti-
mum ventrale ♂
medio lobo instruc-
tum, utrinque emar-
ginatum.
8. Segmentum penulti-
mum ventrale ♂
lobo ipso sinuato
vel emarginato.
9. Segmentum penulti-
mum ventrale ♂
lobo transverso,
margine sinuato,
utrinque rotun-
dato-emarginatum. 13. *siva*, Burr
- 9.9. Segmentum penul-
timum ventrale
♂ lobo angus-
tiori medio pro-
funde fisso . . . 14. *flavicollis*, Shir.

- 8.8. Segmentum penultimum ventrale ♂ lobulo integro.
9. Segmentum penultimum ♂ lobulo acuto; colore rufotestaceo 15. *gerstueckeri*, Dohrn
- 9.9. Segmentum penultimum ventrale ♂ lobulo rotundato; colore fusco vel nigro 16. *ernesti*, Burr
- 5.5. Segmentum penultimum ventrale ♂ neque emarginatum nec lobatum.
6. Segmentum penultimum ventrale ♂ margine postico convexo 17. *nigriceps*, Kirby
- 6.6. Segmentum penultimum ventrale ♂ margine postico sinuato vel truncato.
7. Segmentum penultimum ventrale ♂ margine postico leviter sinuato.
8. Forcipsis brachia ♂ depressa, recta, vix attenuata.
9. Pronotum rotundatum; colore fulvo; species africana 18. *bicolor*, Dubr.
- 9.9. Species borneensis. 19. *griffithsi*, sp. n.
- 8.8. Forcipsis brachia ♂ basi incrassata, tum attenuata, subarcuata; (colore fusco; species ceylonica) 20. *greeni*, Burr
- 7.7. Segmentum penultimum ventrale ♂ margine postico truncato vel rotundato.

8. Segmentum ultimum dorsale ♂
vix inflatum, abdomine vix vel paullo latius.
9. Segmentum penultimum ventrale ♂ apice rotundatum vel angustatum, vel saltem lateribus subrotundis.
10. Segmentum penultimum ventrale ♂ angulis haud rotundatis (colore fulvo; species indica) 21. *rufescens*, Kirby
- 10.10. Segmentum penultimum ventrale ♂ angulis rotundatis.
11. Segmentum penultimum ventrale ♂ lateribus subconvexis, apice subangustatum, ac truncatum.
12. Statura majore; forcipis brachia elongata; species africana 22. *vosseleri*, Burr
- 12.12. Statura minore; forcipis brachia brevia; species ceylonica 23. *fletcheri*, Burr
- 11.11. Segmentum penultimum ventrale ♂ lateribus subconcavis, apice fortius angustatum; species africana 24. *fella*, sp. n.
- 9.9. Segmentum penultimum ventrale ♂ rectangulare; species orientales.
10. Segmentum ultimum dorsale ♂ abdomine vix latius; forcipis brachia ♂ haud contigua, depressa, interdum falcata; colore fulvo 25. *jacobsoni*, sp. n.

- 10.10. Segmentum ultimum dorsale ♂ abdomine distincte latius, sed haud inflatum; forcipis bracchia ♂ contigua; colore fusco 26. *annandalei*, sp. n.
- 8.8. Segmentum ultimum dorsale ♂ inflatum, abdomine valde latius.
9. Abdomen apicem versus sensim ampliatur, segmento ultimo ceteris valde latiori; species orientalis 27. *liberatus*, Burr
- 9.9. Segmentum ultimum dorsale ♂ fortiter et abrupte inflatum; species africanae.
10. Statura majore; pubescens; occiput impressum; colore fusco, rufo variegato 28. *raffrayi*, Borm.
- 10.10. Statura minore; glabra; occiput repletum; colore atro 29. *aethiops*, Burr

1. *Diplatys gladiator*, Burr

Diplatys gladiator, Burr, (1905⁴) pp. 28 and 29, (1906¹) p. 319, (1910¹) p. 41.

This is a very distinct species; it is one of the few with the normal type of head, with abortive wings and rather short elytra; the coloration and forceps are also distinctive. It is described and discussed in (1910¹). It is recorded from Calcutta.

Type in the Indian Museum, Calcutta.

2. *Diplatys macrocephalus*, Pal.-Beauv.

Forficula macrocephala, Pal.-Beauv., (1805) p. 36, orth. Pl. I, fig. 3.

Diplatys macrocephala, Serv., (1831) p. 33, (1839) p. 51.

" " Scudd., (1876) p. 309.

" " Borm., (1900²) p. 9, fig. 5 (excl. syn.), (nec Borm. 1888 and 1894).

Diplatys macrocephala, Burr, (1900³) p. 47, (1904²) p. 282.

Diplatys macrocephala, Kirby, (1904) p. 1 (excl. syn. *D. raffrayi*).

Diplatys macrocephala, Borelli, (1907⁵) p. 346.

This species, the type of the genus, resembles some of the Indian species with inflated last dorsal segment. It occurs in West Africa, in the Congo State at Boma (Mus. Brux.) and Stanley Pool (c.m.), in Benin under the bark of trees (Pal.-Beauv.), and in Fernando Po, at Basile, at an elevation of 2000 ft. (Borelli). The species from Burma recorded under this name by de Bormans are to be referred to *D. bormansi* and *D. liberatus*.

I was unable to find the type in the Paris Museum, and do not know where it is.

3. *Diplatys falcatus*, Burr

Diplatys falcatus, Burr, (1910¹) p. 42, fig. 4 and fig. 3a in text.

This Indo-Burmese species is described, discussed and figured by me in (1910¹). It has a superficial resemblance to the preceding species, but the penultimate ventral segment is different.

Type in the Indian Museum, Calcutta.

4. *Diplatys lefroyi*, Burr

Diplatys lefroyi, Burr, (1910¹) p. 44, fig. 5 and fig. 3b in text.

This is another Indian species described and figured in the same work. The basal dilation of the forceps is so short that it may easily escape detection. Thus the species has a superficial resemblance to *D. bormansi*, but it is in reality allied to *D. falcatus*.

Type in the Indian Museum, Calcutta.

5. *Diplatys angustatus*, Burr

Diplatys angustatus, Burr, (1910¹) p. 44, fig. 6 and fig. 3c in text.

This Indian species is related to the preceding, but may be at once distinguished by the rectangular lobe on the penultimate ventral segment.

Type in the Indian Museum, Calcutta.

6. *Diplatys thoracicus*, Dohrn

- Cylindrogaster thoracicus*, Dohrn, (1863) p. 59.
" " Borm., (1900²) p. 12.
" " Kirby, (1904) p. 2.

This Brazilian species may be recognised at once among all its congeners, by the long and narrow pronotum, which is nearly twice as long as broad, with parallel sides. The head is humid, with depressed occiput and sharp postocular keels.

It is apparently a rare species. Dohrn records it from Rio de Janeiro, and there is a broken male from Espirito Santo in the Brunner collection in Vienna.

Dohrn states that the type is in the Helsingfors Museum.

7. *Diplatys gracilis*, Stål

- Cylindrogaster gracilis*, Stål, (1855) p. 350.
" " Dohrn, (1863) p. 58.
" " Borm., (1900²) p. 11, fig. 8.
" " Kirby, (1904) p. 2.
" " Burr, (1909²) p. 254.
Diplatys gracilis, Stål, (1860) p. 306.
Cylindrogaster sahlbergi, Dohrn, (1863) p. 59.
" " Borm., (1900²) p. 12.

This is a second Brazilian species, resembling the former, but with shorter pronotum, and dull red colour. I sink as synonymous *D. sahlbergi*, Dohrn, which differs only in trifling variation of colour: de Bormans (l.c.) suggested their specific identity. The globular fourth, and pyriform fifth, antennal segments are distinctive.

It is recorded from Rio de Janeiro, Theresopolis, and Espirito Santo.

8. *Diplatys jansoni*, Kirby

- Cylindrogaster jansoni*, Kirby, (1891) p. 507.
Diplatys jansoni, Borm., (1893) p. 2, Pl. I, fig. 102,
(1900²) p. 9.
Diplatys jansoni, Kirby, (1904) p. 2.
" " Burr, (1904²) p. 278, 280.

It is a handsome red and black species occurring in Central America. It is closely allied to the following.

The head in both these species has the same structure as in the Ethiopian *D. aethiops*, that is, smooth and humid,

with thickened posterior margin joining the postocular keels.

The contrast between the deep black and bright orange red is very striking; the females especially have a strong superficial resemblance to red and black *Staphylinidae*.

Type in the B.M.

9. *Diplatys severus*, Borm.

Diplatys severa, Borm., (1893) p. 2, Pl. I, fig. 3, (1900²) p. 9.

Diplatys severa, Kirby, (1904) p. 2.

" " Burr, (1904²) p. 278 and 280.

An all-black ally of the preceding, occurring also in Central America. De Bormans suggested that it may be merely a melanic form of *D. jansoni*, but the last abdominal segment is more strongly dilated and the body is much more hairy.

Type in the B.M.

10. *Diplatys conradti*, Burr

Diplatys conradti, Burr, (1904²) p. 278 and 281, (1907⁹) p. 508.

Diplatys conradti, Borelli, (1907⁵) p. 346.

This is an African species allied to *D. raffrayi*, but slenderer, the postocular carina shorter and blunter; the penultimate ventral segment of the male has a round median emargination, as in the structurally related Burmese *D. bormansi*, but the pronotum is longer.

Type in the Paris Museum.

11. *Diplatys bormansi*, Burr

Diplatys macrocephala, Borm. (nec Pal.-Beauv.), (1888) p. 433, (1894) p. 372, (1900²) p. 9 (text, partim).

Diplatys nigriceps, Burr, (1904²) p. 279 and 284 (partim).

Diplatys bormansi, Kirby, (1904) p. 1 (nomen nudum).

" " Burr, (1910¹) p. 45, figs. 91, 91a.

This is a Burmese species which was confused by de Bormans with *D. macrocephalus*, and by me with *D. nigriceps* and *D. greeni*. It differs from them all in having the penultimate ventral segment of the male emarginate in the middle.

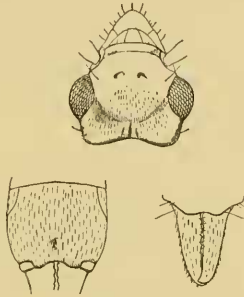
The superficial resemblance to *D. nigriceps*, *D. greeni*, and *D. liberatus* is very strong.

Type in my collection.

12. *Diplatys dohrni*, sp. n.

Parva, nigra; caput laeve, tumidum; segmentum ultimum sat inflatum; segmentum penultimum ventrale parallelum, margine postico utrinque profunde exiso, lobo medio sinuato; forcipis brachia contigua, conica. ♂.

	♂
Long. corporis	7.5 mm.
„ forcipis	1 „



D. dohrni.

Small and slender; general colour black.

Antennae brownish, second and third segments yellowish (ten segments remain).

Head tumid, smooth, sutures obsolete; postocular region tumid, not keeled.

Pronotum bordered posteriorly with whitish; about as broad as long, and somewhat narrowed posteriorly.

Elytra very ample, pubescent, black.

Wings ample, and long, of the same colour.

Legs blackish, the joints yellowish.

Abdomen black, with golden pubescence; slender, widening gradually from the waist to the

Last dorsal segment, which is large, considerably, but not abruptly, inflated.

Penultimate ventral segment ample; posterior border with a deep round emargination on each side, near the corner, thus forming a medium transverse lobe which is gently sinuate, with rounded angles.

Forceps with the branches short, contiguous, and straight.

JAVA: (Fruhstorfer).

This species is founded on a single male kindly communicated to me by Dr. H. Dohrn, in whose collection it is.

It belongs to the group of *D. bormansi* with round

emarginations on the penultimate ventral segment, but the emarginations are far deeper and stronger than in that species, and more rounded, with a consequently more prominent median lobe, which has the angles more rounded. The form resembles that of *D. siva*, but this is a much smaller and weaker insect.

13. *Diplatys siva*, Burr

Diplatys siva, Burr, (1904²) p. 278 and 283, (1906³) p. 387, (1907⁹) p. 508, (1910¹) p. 49.

This is a large, dull grey-brown North Indian species, well characterised by the peculiar form of the penultimate ventral segment of the male.

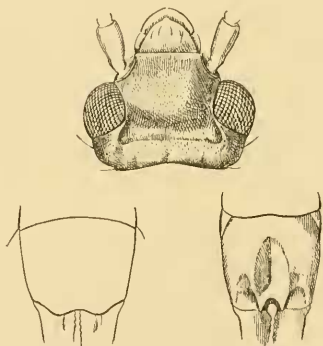
Type in the Paris Museum.

14. *Diplatys flavicollis*, Shiraki

Diplatys flavicollis, Shir., (1907) p. 104.

„ „ Burr, (1909⁷) p. 339 and 340.

This species is described by Shiraki from Formosa on the model of the old-fashioned descriptions of de Bormans,



D. flavicollis.

with practically no reference to structure; so from his work alone it is impossible to determine its true position with accuracy.

Fortunately, I possess a male from Taiwan, Formosa, which agrees in every respect with Shiraki's description, and I have no hesitation in identifying it as *D. flavicollis*.

The chief feature is the very characteristic form of the penultimate ventral segment, in the middle of the posterior

margin of which there is a deep and narrow incision, forming a pair of rather long, acute lobes.

The head is of the third type, that is, the frons is strongly tumid, with well-marked transverse depression behind; the edge of the occiput is somewhat swollen, the sutures not very distinct.

The pronotum is subpentagonal, a trifle longer than broad, and somewhat narrowed posteriorly. The last dorsal segment is inflated, but not very strongly, and the forceps are simple, contiguous, somewhat depressed, and straight, feebly hooked at the tips.

15. *Diplatys gerstaeckeri*, Dohrn

Nannopygia gerstaeckeri, Dohrn, (1863) p. 60.

” ” Scudder, (1876⁴) p. 326.

” ” Borm., (1884) p. 372, (1900²)

p. 11.

Dyscritina longisetosa, Westwood, (1881) p. 601, Pl. XXII, fig. 1.1-a-1.

Dyscritina longisetosa, Green, (1896) p. 229, (1898) p. 383.

Diplatys longisetosa, Burr, (1898¹) p. 388, Pl. XVIII, fig. 4, 5 and 16, Pl. XIX, fig. 9 and 4.

Diplatys longisetosa, Borm., (1900²) p. 10, fig. 6.

Diplatys gerstaeckeri, Burr, (1901) p. 74, Pl. A, fig. 4 and 5, (1904²) p. 299 and 282, (1910¹) p. 46, fig. 7 and 3d in text.

Cylindrogaster rufescens, Burr (nec Kirby), (1900³) p. 48.

This little red Singalese species is fully described, figured and discussed by me in (1910¹). It forms a natural group with *D. ernesti*, Burr, characterised by the emargination of the penultimate ventral segment of the male.

It is this species whose postembryonic development has been described by Green under the name *Dyscritina longisetosa*.

Type in the Berlin Museum.

15a. *Diplatys gerstaeckeri*, var. *calidasa*, Burr

Diplatys gerstaeckeri, var. *calidasa*, Burr, (1904²) p. 279 and 282, (1906³) p. 387, (1907³) p. 508, (1910¹) p. 48.

This is a large North Indian form, of which the female only is known; it resembles *D. gerstaeckeri* in every respect except size, but discovery of the male may show

that it is a distinct species. Perhaps it is the female of *D. rufescens*.

Type in the Paris Museum.

16. *Diplatys ernesti*, Burr

Diplatys ernesti, Burr, (1910¹) p. 48, fig. 9.

A small black Singalese species closely allied to *D. gerstaeckeri*. It differs in the all-black colour and in the more obtuse and broader median triangular lobe on the posterior margin of the penultimate ventral segment of the male.

Type in my collection.

17. *Diplatys nigriceps*, Kirby

Diplatys nigriceps, Kirby, (1891) p. 507, (1904) p. 2.

” ” Borm., (1900²) p. 10 (partim).

” ” Burr, (1902) p. 477, (1904²) p. 279 and 284 (partim).

Diplatys eroixi, Burr, (1904²) p. 280 and 284, (1907⁹) p. 508.

This black and white species is characterised by the form of the penultimate ventral segment of the male, which is gently rounded at the sides, with the posterior margin slightly, but distinctly, convex in the middle; there is also a median depressed sulcus.

It was originally described from Hong Kong, but probably *D. eroixi*, Burr, in the Paris museum, from Malacca Peninsula, and the Borneo specimen in the Budapest Museum, are to be referred here.

It is unknown in Burma, Ceylon, and India, though specimens of *D. greeni*, Burr, from Ceylon, were confused with it; and probably, also, of *D. bormansi*, Burr, and *D. liberatus*, Burr, from Burma.

Therefore, several mentions of *D. nigriceps* in literature really refer to one of those species, the synonymy of which should be examined.

Type in the B.M.

18. *Diplatys bicolor*, Dubr.

Labia bicolor, Dubrony, (1879) p. 95.

” ” Borm., (1900²) p. 72.

” ” Kirby, (1904) p. 25.

This species, of uniform tawny colour, and head of the normal type, is known from Abyssinia and Eritrea.

Type in Madrid Museum.

19. *Diplatys griffithsi*, sp. n.

Statura minore; colore fulvo et castaneo; pronotum breve; subrotundatum; segmentum ultimum dorsale ♂ haud inflatum; segmentum penultimum ventrale ♂ parallelum, margine postico late sinuato, angulis subrotundatis; forcipis brachia ♂ depressa, recta, intus crenulata, apice recurva.

	♂	♀
Long. corporis . . .	7.5 mm.	9.5 mm.
„ forcipis . . .	1.25 mm.	1.25 mm.

Size small; general colour dark chestnut, varied with tawny. Antennae with 15-17 segments, all cylindrical, 4th a little shorter than the 3rd, basal two blackish, the rest yellowish, passing to greyish towards the apex.

Head broad and flat, dark chestnut, frons tumid, occiput depressed with distinct keel behind the eyes, which are very large and prominent; the frons is less tumid and occiput less depressed in the ♀.

Pronotum tawny, about as broad as long, anterior, margin convex sides converging posteriorly as the posterior margin is strongly narrowed; prozona distinctly tumid and metazona depressed.

Scutellum prominent, depressed.

Elytra ample, dark chestnut, tawny at the shoulders.

Wings ample, dark chestnut; legs pale yellowish, sometimes shaded with brown.

Abdomen parallel in ♀, gently constricted in the middle in the ♂, smooth, yellowish at the base, passing to dark chestnut towards the apex; lateral tubercles of 3rd and 4th segments distinct.

Last dorsal segment in the ♂ not inflated, no wider than the abdomen, rectangular in the ♂, slightly narrowed in the ♀.

Penultimate ventral segment in the ♂ parallel-sided, posterior margin broad, sinuate, the angle slightly produced, thus forming small, rounded lobes; in the ♀ narrow, rounded.

Forceps with the branches in the ♂ depressed, subcontiguous, straight, inner margin serrulate, points hooked; in ♀ subcontiguous, straight, trigonal.

BORNEO: *Sarawak*, Saribas, August 1908 (Museum Sarawak); British North Borneo, Sambas, March 1st, 1909 (*C. Griffiths*, c.m.).

This species falls with the group of *D. greeni*, characterised by the sinuous posterior margin of the penultimate

ventral segment of the male ; from *D. greeni* it differs in the depressed forceps ; from the Ethiopian, *D. bicolor*, Dubr., and *D. vosseleri*, Burr, in the parallel-sided penultimate ventral segment of the ♂ and broad sinuation. It is different in colour from *D. bicolor*, and much smaller than *D. vosseleri*. It is dedicated to my friend Mr. Cyril Griffiths, A.R.S.M., who discovered the female at Sambas.

Type in my collection.

20. *Diplatys vosseleri*, Burr

Diplatys vosseleri, Burr, (1907¹⁰) p. 201, (1909²) p. 253.

This is a large brown East African species ; the head is of the third, or typical, form, with all the sutures very well marked.

Type in the Berlin Museum.

21. *Diplatys greeni*, Burr

Dyscritina longisetosa, Green, (1896) p. 229, figs. partim.

Dyscritina, sp. n., Green, (1898) p. 383.

Diplatys nigriceps, Burr (nec Kirby, nec Borm.), (1898¹) p. 389, Pl. XVIII, figs. 1-3, Pl. XIX, figs. 6-8 and 15, (1901) p. 75, Pl. A., figs. 1-3 ; Borm., (1900²) p. 10 partim ; Kirby, (1904) p. 2 partim.

Diplatys greeni, Burr, (1904²) p. 280 and 285, (1910¹) p. 50.

This is the species whose postembryonic development was worked out by Green, together with that of *D. gers-taeckeri* : it was originally referred by me to *D. nigriceps*, but the accumulation of more material and the growth of our knowledge has shown that it is a perfectly distinct species.

Superficially it resembles *D. bormansi*, but differs in the gently sinuate subanal plate ; it is the only species known to me in which the forceps are stout at the base and convex, cylindro-conical, quickly attenuate and slightly arcuate. In *D. bormansi* they are trigono-conical and almost straight.

Type in my collection.

22. *Diplatys rufescens*.

Cylindrogaster rufescens, Kirby, (1896) p. 524, Pl. XX, fig. 2.

Diplatys rufescens, Kirby, (1904) p. 2 ; Burr, (1907⁹) p. 508, (1910¹) p. 51, fig. 75.

This is a rather large red-brown North Indian species. It is imperfectly known. The type, in the British Museum, is in poor condition.

23. *Diplatys fletcheri*, Burr

Diplatys fletcheri, Burr, (1910¹) p. 52, fig. 8.

Described and figured in (1910¹) from a pair taken at Madulsima, in Ceylon, by Mr. T. B. Fletcher. The head is typical, with tumid frons, depressed occiput, and long, straight, sharp keels.

Type in my collection.

24. *Diplatys raffrayi*, Dubr.

Diplatys raffrayi, Dubr., (1879) p. 91; Borm., (1900²) p. 9; Burr, (1904²) p. 279-282; Kirby, (1904) p. 1; Borelli, (1907⁵) p. 346(?).

Diplatys macrocephala, Kirby, (1904) p. 1 partim.

This is an African species which somewhat resembles, and is doubtless often confused with, *D. macrocephalus*.

I have found a specimen which is certainly the original type, in the Madrid Museum, labelled "Raffray, Zanzibar."

It may be distinguished from *D. macrocephalus*, not by the colour, with which de Bormans was content, but by the slenderer and more hairy body, less inflated last dorsal segment, and depressed and regularly dilated forceps.

I am inclined to doubt Borelli's determination of a West African specimen, since the form is only known decidedly from Zanzibar. It probably replaces *D. macrocephalus* in East Africa.

Type in Madrid Museum.

25. *Diplatys fella*, Burr

Statura mediocri; colore rufo; pronotum fere aeque longum ac latum, antice convexum, lateribus et margine postico rotundatis; segmentum ultimum dorsale haud ampliatus, abdomine vix latius; segmentum penultimum ventrale apicem versus subangustatum, margine postico truncato, angulis rotundatis; forcipis brachia recta, parallela, haud dilatata depressa, ♂; ♀ ignota.

	♂	
Long. corporis		12.5 mm.
„ forcipis		15 „

Size medium; colour reddish tawny.

Antennae with about 25 segments, yellowish, 3rd segment rather short, barely twice as long as broad, 4th and 5th very short, no longer than broad, 6th a little longer, 7th about equal to 3rd, the rest gradually lengthening.

Head brick-red; frons tumid, occiput depressed, the posterior keels sharp and distinct.

Pronotum yellowish red, a little narrower than the head, about as broad as long, convex anteriorly, narrowed posteriorly, the sides and posterior margin straight, the angles rounded.

Elytra very ample, tawny near the base, darker towards the apex.

Wings long, pale straw-coloured.

Legs slender, yellowish.

Abdomen brick-red.

Last dorsal segment scarcely wider than the abdomen, about as wide as long.

Penultimate ventral segment truncate posteriorly, somewhat narrowed towards the apex, the angles themselves rounded.

Forceps brick-red, darker at the base; depressed but triquetre, subcontiguous and parallel, attenuate towards the apex, and gently incurved at the apex; inner margin finely denticulate in basal portion.

EGYPT: Cairo.

This species resembles *D. jacobsoni* and *D. rufescens* in the straight forceps, narrow anal segment, and truncate penultimate ventral segment with rounded angles; it differs from the former in having the penultimate ventral segment distinctly narrowed apically, in this respect somewhat approaching *D. rufescens*, but in that species the angles are not rounded. The pronotum is a little shorter and more rectilinear than in *D. rufescens*, and the colour red or tawny. It is decidedly larger than *D. jacobsoni*.

The African species which come nearest to it are *D. bicolor* (in which the pronotum is rounded), *D. vosseleri* (a much larger, darker, and more robust insect), but in both these the penultimate ventral segment is more or less sinuate.

Type in Madrid (?).

26. *Diplatys jacobsoni*, sp. n.

Statura minore; segmentum ultimum dorsale abdomine vix latius; segmentum penultimum ventrale rectangulare, truncatum; orpiscis brachia recta, depressa ♂.

	♂
Long. corporis	6 mm.
„ forcipis	1 „

Size small ; build slender ; colour reddish brown ; the whole body clothed with a dense, short, pale pubescence.

Antennae yellowish, typical (10 segments remain).

Head shining brown ; frons smooth and replete ; occiput depressed ; postocular keels sharp.

Pronotum about as broad as long, anterior border convex, sides straight ; posterior margin straight, the angles rounded ; slightly narrower posteriorly than anteriorly ; red brown.

Elytra ample, brown, yellowish at the shoulders.

Wings long and narrow, dull brown.

Feet long and slender, yellowish.

Abdomen yellowish at the base, passing into reddish.

Last dorsal segment square, only slightly wider than the narrowest part of the abdomen.

Penultimate ventral segment rectangular, truncate, rather narrow.

Forceps with the branches straight, contiguous, depressed or regularly tapering, points gently hooked, trigonal ; sometimes abruptly attenuated before the apex ; inner margin smooth, ♂ ; ♀ unknown.

JAVA : Batavia, 29. ii, 08, 1 ♂ (leg. E. Jacobson, in Mus. Leyden).

The forceps may vary considerably. In the specimen originally chosen as the type, the branches, though depressed, taper gradually, and are gently hooked at the apex. In a specimen in the Vienna Museum, the forceps are distinctly dilated in the basal half, and then abruptly attenuated, the apical half thus inclosing an elliptical area, recalling several species of *Forficula*. In other specimens in the Vienna Museum there is every gradation between these two extreme forms.

This delicate little species resembles *D. gerstaeckeri*, Dohrn, in colour and in build, but is even smaller and more fragile. It may be at once distinguished by the truncate posterior margin of the penultimate ventral segment of the male.

It also resembles *D. rufescens*, but the penultimate ventral segment in that species has the angles somewhat rounded, and the last dorsal segment is broader, and the build stronger and bigger.

The narrow last dorsal segment distinguishes *D. jacob-*

soni from *D. raffrayi* and *D. aethiops*, but in those African species the forceps are decidedly flattened, whereas in this species, though somewhat depressed, they are in reality trigonal.

Type in Leyden Museum.

27. *Diplatys annandalei*, sp. n.

Statura mediocri; colore fusco; pronotum pentagonale; segmentum ultimum dorsale abdomine latius et haud transversum; segmentum penultimum ventrale haud angustatum, margine postico truncato; forcipis brachia recta cylindrico-conica, haud depressa, contigua: ♂; ♀ ignota.

	♂
Long. corporis	10.5 mm.
„ forcipis	1 „

Size medium, colour fuscous.

Antennae . . .

Head black; frons tumid; occiput depressed.

Pronotum pentagonal, slightly longer than wide, narrowed posteriorly; sides straight, posterior margin straight, angles rounded.

Elytra ample, blackish.

Wings prominent, blackish.

Feet yellowish, banded with blackish.

Abdomen purplish red.

Last dorsal segment black, ample, smooth, wider than the abdomen but not wider than long.

Penultimate ventral segment rectangular, posterior margin truncate.

Forceps with the branches rounded above, the under surface flat, short, straight, unarmed, contiguous and yellowish in colour.

SIAM: Biserat, Bukit Tapang (leg. Annandale, v, '99. Type 1 ♂, in c.m.).

In the form of the pronotum, this species approaches *D. jacobsoni*, but differs in the form of the penultimate ventral segment: from *D. rufescens*, it differs in the shorter pentagonal pronotum.

Type in my collection.

28. *Diplatys liberatus*, Burr

Nannopygia gerstaeckeri, Borm. (nec Burr, nec Kirby), (1894) p. 372 partim, (1900²) p. 11 partim.

Diplatys liberatus, Burr, (1910¹), p. 52, figs. 90, 90a.

This species is founded on a single male, now in the British Museum, which is one of the original specimens taken by Fea in Burma, and recorded by de Bormans under the name of *Nannopygia gerstaeckeri*.

It is more nearly allied to *D. nigriceps*, but the subanal plate is not convex: the rectilinear pronotum distinguishes it from that species, and also from *D. rufescens*. The forceps are short, broad and flat, thus approaching the two following species.

Type in B.M.

29. *Diplatys aethiops*, Burr

Diplatys aethiops, Burr, (1904²) p. 280, (1907⁹) p. 508.

” ” Borelli, (1907⁵) p. 346.

This is a small jet-black West African species, re-



D. aethiops.

sembling the Central American *D. severus* in colour and the structure of the head.

Type in Paris Museum.

In the British Museum there is a specimen from Dar-es-Salaam, which I refer here.

30. *Diplatys viator*, Burr

Diplatys viator, Burr, (1904²) p. 278 and 281, (1907⁹) p. 508. (♀ only.)

My inability to place this species in its true position is just retribution for the unpardonable offence of describing a new species without possession of an undoubted male.

The original description includes two distinct species; the true *D. viator* is a dull black female from Madagascar, nearly hairless, with a long and narrow pronotum.

The male attributed to it is from Fernando Po, but the apex of the abdomen, with the essential characters, is missing!

The pronotum is short and rather broad, obtusely

rounded anteriorly, sides straight and converging, as the disc is narrowed towards the truncate posterior margin. Perhaps it is the male of *D. coriacea*, Kirby, or *D. feae*, Bor.

Type in Paris Museum.

31. *Diplatys feae*, Borelli

Diplatys feae, Bor., (1907⁵) p. 347.

Unfortunately described from a single female from Fernando Po, according to Borelli; in colour it resembles *D. nigriceps*, Kirby, and differs in the form of the head and thickness of the femora. The former is purely a sexual character.

Type in Genoa Museum.

32. *Diplatys coriacea*, Kirby

Forficula coriacea, Kirby, (1891) p. 525.

„ „ Borm., (1900²) p. 127.

Diplatys „ Borelli, (1907⁵) p. 346.

This is another solitary female, in poor condition, from Sierra Leone. Borelli redescribed a female from Portuguese Guinea, which he attributes to it. The purple tinge, pale shouldered elytra, pale abdomen, darkening apically, suggest that it may be the female of *D. conradti*, with which it agrees better than any other known West African form.

33. *Diplatys occidentalis*; Burr

Diplatys occidentalis, Burr, (1904²) p. 280.

This is a small red species, the only one known from the West Indies. The type has unfortunately been damaged.

Type in B.M.

BIBLIOGRAPHY.

- BEAUVOIS, PALISOT DE. (1805.) Insectes r cueillis en Afrique et en Am rique. (Paris, 1805.)
- BORELLI, DR. ALFREDO. (1907⁵.) Ortotteri raccolti da Leonardo Fea nell' Africa occidentale. Dermatteri. (Ann. Mus. Civ. Gen. (3) iii, p. 345-390, 1907.)

- BORMANS, A. DE. (1888.) Viaggio di Leonardo Fea in Birmania e regioni vicine, vii. Dermaptères. (Ann. Mus. Civ. Gen. (2) vi, p. 431, 1888.)
- (1893.) Dermaptera. (In Biologia Centrali-Americana. Zoologia, Orthoptera, 1, pp. 1-12, pls. 1 and 2, 1893.)
- (1894.) Viaggio di Leonardo Fea in Birmania e regioni vicine, lxi. Dermaptères (2me partie). (Ann. Mus. Civ. Gen. (2) xiv, p. 371, 1895.)
- (1900¹.) Quelques Dermaptères du Musée civique de Gênes. (Ann. Mus. Civ. Gen. (2) xx, pp. 441-467, 1900.)
- (1900².) Forficulidae in "Das Tierreich," (11te Lieferung, Orthoptera, pp. 1-142, 1900.)
- BURR, DR. MALCOLM. (1898¹.) On the Species of *Dyscritina*, reared by Mr. Green. (Tr. Ent. Soc. London, pp. 381-390, 1898.)
- (1900³.) Forficules exotiques du Musée royal d'histoire naturelle de Bruxelles. (Ann. Soc. Ent. Belg. xlv, pp. 47-54, 1900.)
- (1901.) The Earwigs of Ceylon. (Journ. Bombay Nat. Hist. Soc. 1901, pp. 59-78 and 316-336, pls. A and B.)
- (1902.) On the Forficularia of the Hungarian National Museum of Budapest. (Termesz. Füzet. xxv, pp. 477, pl. xx, 1902.)
- (1904².) Observations on the Dermaptera, including revisions of several genera and descriptions of New Genera and Species. (Tr. Ent. Soc. London, p. 277, 1904.)
- (1905⁴.) Earwigs of the Indian Museum, with descriptions of New Species. (Journ. Proc. Asiat. Soc. Bengal, (N.S.) ii, No. 9, pp. 381-390, 1905.)
- (1906¹.) Dermapteros de la Guinea Española. (Mem. Soc. Espan. H.N. Mem. 17, pp. 293-295, 1906.)
- (1906³.) A Further Note on Earwigs (Dermaptera) in the Indian Museum, with a description of New Species. (Journ. Proc. Asiat. Soc. Bengal, (N.S.) vol. ii, No. 9, pp. 381-390, 1906.)
- (1907⁹.) Catalogue des Forficulides des Collections du Muséum National d'Histoire Naturelle de Paris. (Première Partie.) (Extrait du Bull. Mus. Hist. Nat. Paris 1907, No. 7, pp. 508-512.)
- (1907¹⁰.) Ueber Dermapteren aus Deutsch-Ostafrika. (Berl. Ent. Zeit. Bd. lii, pp. 201-207, 1907.)
- (1909².) Notes on the *Forficularia* xvi. On Dermaptera in the Greifswald Museum, with Synonymic Notes on some of Gerstaecker's Types. (Ann. Mag. N.H. (8) iii, p. 253-257 1909.)

- BURR, DR. MALCOLM. (1909⁷.) Criticism of *Matsumura* and *Shiraki* (1905), and of *Shiraki* (1905, 1905-6, 1907). (Rev. russe d'Ent., 1909, pp. 335-340, in Russian.) (Translation in English in Ent. Record 1910, p. 134.)
- (1910⁴.) Dermaptera (Earwigs) in "The Fauna of British India, including Ceylon and Burma." (Pp. i-xviii and 1-127, pls. i-x. London, 1910.)
- (1910⁴.) The Dermaptera (Earwigs) of the United States National Museum. No. 1760. (From the Proc. of the U.S.N.M., vol. xxxviii, pp. 443-567. Washington, August 1910.)
- DOHRN, DR. H. (1863.) Versuch einer Monographie der Dermapteren. (Stett. Ent. Zeit. xxiv, p. 35, 1863.)
- DUBRONY, A. DE. (1879.) Énumération des Orthoptères des régions Indienne et Austro-Malaise, rapportées par MM. Doria, O. Beccari, et L. M. d'Albertis. (Ann. Mus. Civ. Gen. xiv, pp. 348-383, 1879.)
- GREEN, E. ERNEST. (1896.) Notes on *Dyscritina longisetosa*, Westw. (Tr. Ent. Soc. London, p. 229, 1896.)
- (1898.) Further Notes on *Dyscritina longisetosa*, Westw. (Tr. Ent. Soc. London, p. 381, pls. xviii and xix, 1898.)
- KIRBY, W. F. (1891.) A Revision of the Forficulidae, with descriptions of New Species in the British Museum. (Linn. Soc. Journ., Zool. xxiii, pp. 502-531, pl. xii, 1891.)
- (1896.) Descriptions of New Species of Forficulidae in the Collection of the British Museum (N.H.). (Linn. Soc. Journ., Zool. xxv, pp. 520-529, pl. xx, 1896.)
- (1904.) A Synonymic Catalogue of Orthoptera. (Vol. i, 1904, London.)
- SCUDDER, S. H. (1876⁴.) Critical and Historical Notes on the Forficulariae. (Proc. Bost. Soc. Nat. Hist. xviii, pp. 287-332, 1876.)
- SERVILLE, AUDINET DE. (1831.) Revue Méthodique des Insectes de l'ordre des Orthoptères. (Ann. Sci. Nat. xxii, pp. 28, 134 and 262, 1902.)
- (1839.) Histoire Naturelle des Insectes Orthoptères. Suite à Buffon. Paris, 1839.
- SHIRAKI, T. (1907.) Neue Blattiden und Forficuliden Japans. (Tr. Sapporo N.H. Soc., vol. ii, pp. 103-111, 1907.)
- STÅL, C. (1855.) Nya orthoptera. (Öfv. Vet. Ak. Förh. xii, p. 348, 1855.)

